



Virtual Lab

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Revision: 03

Project Objectives (two year)

- Provide students and their educators with virtual but realistic software implementations of sophisticated scientific instruments commonly used by NASA scientists and engineers.
- Design and implement the virtual instruments such that additional specimens can be added easily and additional instruments can be used to study the same specimens.
- Build on the LTP Phase 1 Virtual Lab by expanding the set of specimens for the Virtual Scanning Electron Microscope.
- Provide mechanisms to enable independent applications to invoke and contain the virtual instruments.

Customers

- High school, university and technical-college students who must become familiar with the instruments to achieve their educational or research goals.
- Junior high school science students learning the methods used to perform scientific investigation.
- Museums and science centers wishing to educate their visitors in the tools of scientific investigation and engineering analysis.

Use Cases

- Students studying to operate scientific instruments, either as a profession or as a skill necessary in their studies, use the Virtual Lab to gain familiarity with those instruments. Schools make the virtual instruments widely available at low cost for this purpose.
- Researchers employ the instruments to form or practice investigation protocols for their experiments.
- Science students in any grade use the virtual instruments to complete or augment their lab studies, reports or homework.
- Museum and science center curators incorporate the virtual instruments in automated or interactive displays to explain mechanisms, processes, methods or other aspects of scientific or engineering investigation and discovery.

Deliverables and Schedule (year one)

- 15 Dec 2003 – Determination of number of instruments and specimens to develop.
- 31 Jan 2004 – Publish RFP for instrument creation.
- 15 Mar 2004 Selection of instruments/proposals and external instrument developers.
- 31 Mar 2004 – Completion of Virtual Design Center training.
- 31 Mar 2004 – First two additional SEM specimens available. Others to follow at one month intervals for six months.
- 30 Apr 2004 – Initial educator review of plans.
- 15 Jul 2004 – First prototype of second and third instruments available for student and teacher evaluation.

People

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Partnerships

- Beckman Institute at University of Illinois
- KSC IT Simulation Group
- *Others to be established*

Dependencies

- IFMP and KSC/Glenn grant approval process.